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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/624,653 | 07/22/2003 | Eldad Perahia | CISCP828 | 7031 |
| 26541 | 7590 | 06/12/2007 | EXAMINER | |
| Cindy S. Kaplan P.O. BOX 2448 SARATOGA, CA 95070 | | | QURESHI, AFSAR M | |
| ART UNIT | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) |
|------------------------------|------------------------|---------------------|
| | 10/624,653 | PERAHIA ET AL. |
| Examiner | Art Unit | |
| Afsar M. Qureshi | 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 July 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-41 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-10,22-31 and 36-38 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) 11-21,32-35 and 39-41 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 22 July 2003 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/8/04.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application
6) Other: _____

DETAILED ACTION

Minor Informalities

Specification

1. The disclosure is objected to because of the following minor informalities: In the Specification, page 18, line 8, "...subscriber units operating in SDMA **node** and..." should be -- ...SDMA **mode** and --

Drawings

2. The drawings are objected to because of the following minor informalities: In fig. 5, For Client 1, **504** should be replaced with **506** (see Specification page15, line 18)

Appropriate correction is required.

Election/Restrictions

3. This application contains claims directed to the following groups. These groups are independent or distinct because claims to the different groups recite the mutually exclusive characteristics however they are not obvious variants of each other.

Group I. Claims 1-10, 22-31, 36-38 drawn to method and apparatus for operating an access point in a MIMO communication link with first and second receiver, Class 370, subclass 241.

Group II. Claims 11-15, 32-35 drawn to method and apparatus in a MIMO communication system with first and second training period and quieting ODFM signal to allow transmission of other channel training information, Class 375, subclass 230.

Group III. Claims 16-21, 39-41 drawn to system and method of switching between SDMA mode and Non-SDMA mode operation during contention period. Class 455, subclass 562.1

Applicant is required, under 35 USC 121 to elect a single disclosed group for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, the method for operating an access point in a MIMO wireless communication system is generic.

There is an examination and search burden for these patentably distinct groups due to their mutually exclusive characteristics and searching different classes/subclasses.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

Applicant's attorney (Cindy Kaplan, Attorney of the application, dated 6/7/2007) elected Group I (Claims 1-10, 22-31 and 36-38) by telephone. Applicant is requested

for a written confirmation (with or without traverse) of *election* in the subsequent response to this action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10,22-29, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Alastalo (US 6,721,302).

Claims 1-10. Alastalo discloses, in wireless communication, a method for communicating packets in SDMA wherein the packet sizes are of variable lengths. A first data packet 82 is communicated to a mobile terminal (subscriber) via a first spatial channel and another data packet 86 is communicated to a second terminal within the substantially similar ranges and same bandwidth, selectively decoding data packets (claims 1, 4, 7, 9). Alastalo further discloses sending an acknowledgement after transmission (claim 2) and padding data packet of shorter length so that transmission

begins and ends substantially simultaneously (claim 3) and transmitting message identifying time period for contention free (CFP) transmission (claim 5) (see col. 7, lines 14-57, figs. 1-4 and 8).

As to claims 6, 8 and 10, Alastalo discloses the WLAN provides for radio communications with the mobile terminal is defined by the IEEE 802.11 a standard as a design by choice.

Claims 22-24, 28-29. In addition to limitations discussed in the rejection of claims 1, 2 and 3 above, Alastalo discloses a transceiver circuitry of access points 14 (fig. 1), each having a transmitter 28 and receiver 26, first transmitter 28 of first access point sends a first packet to a first mobile station (subscriber unit) and second transmitter 28 of second access point sending a second packet to a second subs. unit in the same bandwidth (see col. 6, lines 10-24). As to claims 29 and 31, see rejection of claim 6 above.

Claims 25-27, 36-37. As to claim 25, in addition to limitations discussed in the rejection of claim1 above, Alastalo discloses that wireless communication systems are typically constructed pursuant to standards promulgated by a regulatory or quasi-regulatory body, in this case, IEEE 802.11 standard, pertaining to MAC layer set forth in this invention. Therefore it is inherent to utilize a MAC layer processor identifying ranges of mobile units (subscriber units) from access points (see col. 1, lines 55 through col. 2,

line 5 and col. 7, lines 41-45). As to claims 26 and 27, 37, see rejection of claims 5 and 6 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 30,31 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alastalo in view of Wallace et al. (US 2002/0193146).

The limitations, such as, receiver block receiving a first packet from an access point in a first spatial subchannel and other limitations are already discussed in the rejection of claim 1 above. However, Alastalo does not specifically include details of encoding data packet being transmitted in a first spatial subchannel and subsequently, decoding at the receiver end (claim 30) [which is an inherent step in MIMO, utilizing IFFTs to avoid interference]

Wallace, in the same field of endeavor, discloses communicating data in SDMA and non-SDMA mode (see Abstract, [0034],[0104]) (claim 38) wherein, in the receiver system 350 (fig. 12) decodes (processor 356 as *decoder*) packet complementing only to

encoded packet in the transmitting block, hence decoding only first packet and not second packet) (see paragraph [0102]) (claim 30)

As to claim 31, see rejection of claim 6.

Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to modify invention by Alastalo to include a decoder/processor as taught by Wallace in order to apply an appropriate reception processing especially, in a mixed mode system since MIMO processing spreads signals for each individual communication link with unique spreading code.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Walton et al. (US 2003/0128658); Krishnan et al. (US 2004/0081123); Paulraj et al. (US 6,067,290); Tellado et al. (US 2004/0052228); Oshima et al. (US 5,600,672).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M. Qureshi whose telephone number is (571) 272 3178.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Field Lynn can be reached on (571) 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



AFSAR QURESHI
PRIMARY EXAMINER
6/8/2007